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MEETING ABSTRACT Open Access

Laboratory markers of diabetes mellitus in the elderly

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Background

Diabetes mellitus is a leading cause of morbidity and mortality in Western countries. To prevent diabetic chronic complications, various trials have validated the need for tight glycemic control [1]. Important laboratory markers used in the follow-up of diabetic patients include glycated hemoglobin (HbA1c) [2,3] and microalbuminuria [3], an important predictor of diabetic nephropathy.

The aim of this study is to evaluate HbA1c as a significant index of glycemic control, and to determine the prevalence of microalbuminuria in elderly diabetic patients in our geographic area.

Materials and methods

HbA1c levels were measured using a high-pressure liquid chromatography methodology (HA 8160, Menarini Diagnostics), and analysed in 352 consecutive diabetic patients (age: >41 years) within a two month time period (September-October 2009). The optimal HbA1c target for diabetic patients was considered <7%, as recommended by the American Diabetes Association. Urinary albumin levels were measured by an immunoturbidimetric assay (BN II, Dade Behring) in 226 consecutive diabetic patients (age: >41 years) within the same time period. Microalbuminuria was diagnosed if albumin in urine samples was > 30 mg/L.

Results

Within the patients examined, the overall HbA1c mean is 6.95% +1.51, and the overall prevalence of high HbA1c (>7%), indicative of poor glycemic control, is 34.4%. Interestingly, the prevalence of patients with high HbA1c is over 30% in any age range examined, with a peak in the age range 61-70 (Table 1). However, while the overall prevalence of microalbuminuria is 19.2%, in agreement with data reported by the Italian Ministry of Health, microalbuminuria is diagnosed in about 8% of diabetics under 60 years, and in almost 30% of patients over 60 years (Table 2).

Table 1

Age range and number of patients	HbA1c (mean+SD)	Patients with HbA1c >7%
41-50 (n = 49)	6.58% + 1.82	16 (32.6%)
51-60 (n = 85)	7.10% + 1.74	27 (31.8%)
61-70 (n = 112)	7.14% + 1.53	46 (41.1%)
71 and over (n = 106)	6.86% + 1.07	32 (30.2%)

Table 2

Age range and number of patients	Patients with microalbuminuria
41-50 (n = 48)	4 (8.3%)
51-60 (n = 57)	5 (8.7%)
61-70 (n = 62)	17 (27.4%)
71 and over (n = 59)	17 (28.9%)

Conclusions

Our data indicate that a sub-optimal glycemic control is observed in more than 30% of the diabetics examined, regardless of age. Furthermore, our data confirm that older age is associated with an increased risk of microalbuminuria and progressive impairment of renal function.

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